National Institute of Environmental Health Sciences

Environmental determinants of cholera outbreaks in inland Africa: A systematic review of main transmission foci and propagation routes

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Abstract:

Cholera is generally regarded as the prototypical waterborne and environmental disease. In Africa, available studies are scarce, and the relevance of this disease paradigm is questionable. Cholera outbreaks have been repeatedly reported far from the coasts: from 2009 through 2011, three-quarters of all cholera cases in Africa occurred in inland regions. Such outbreaks are either influenced by rainfall and subsequent floods or by drought-and water-induced stress. Their concurrence with global climatic events has also been observed. In lakes and rivers, aquatic reservoirs of Vibrio cholerae have been evocated. However, the role of these reservoirs in cholera epidemiology has not been established. Starting from inland cholera-endemic areas, epidemics burst and spread to various environments, including crowded slums and refugee camps. Human displacements constitute a major determinant of this spread. Further studies are urgently needed to better understand these complex dynamics, improve water and sanitation efforts, and eliminate cholera from Africa.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Quality, Human Conflict/Displacement, Precipitation, Temperature

Extreme Weather Event: Drought

Food/Water Quality: Pathogen

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Freshwater

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Region

Other African Region: Inland Africa

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Cholera

Resource Type: ☑

format or standard characteristic of resource

Review

Timescale: ☑

time period studied

Time Scale Unspecified